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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,100	06/28/2001	Kyung-Ha Lee	678-668 (P9392)	6294

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EXAMINER

ZHENG, EVA Y

ART UNIT PAPER NUMBER

2634

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/894,100

Applicant(s)

LEE ET AL.

Examiner

Eva Yi Zheng

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/29/02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. Figure 1, 2, 3, 4 and 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawing Fig. 1 is objected to because block 13 should be labeled as --I/Q FM DEMODULATOR--. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Phrase "said" should be omitted in the Abstract.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite lack of antecedent basis.

a) Regarding claims 1 and 8 recites the limitation "said frequency modulated signals" and "said message word accumulator". There is insufficient antecedent basis for this limitation in the claim.

- b) Regarding Claims 11, 13 and 14 recite the limitation "said frequency modulated signals". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 8-11 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hutchinson, IV et al. (US 5,812,607) (IDS).

A) Regarding claim 1, Hutchinson, IV et al. disclose a digital data receiver for recovering at least one message word signal included in a received digital data game which consists of a plurality of sub-frames, each sub-frame including a given dotting sequence signal, a given word sync signal and a message word signal in which each signal is represented by a plurality of symbols and modulated by frequency in a mobile communication system, wherein a dotting sequence signal of the first sub-frame is longer than dotting sequence signals of the rest of the sub-frames, and the word sync signal and message word signal of each sub-frame consist of the same length and pattern (Abstract), the digital data receiver comprising;

a digital FM demodulator (96 in Fig. 1) for receiving said frequency modulated signals, and for demodulating a dotting sequence signal, a word sync signal and a

message word signal of each sub-frame included in said digital data frame (as shown in Fig.1; Col 5, L33- Col 6, L17);

a dotting signal detector (406 in Fig. 6), which is provided with symbols of said signals demodulated by said digital FM demodulator, for detecting a dotting sequence signal of at least one sub-frame by determining whether the symbols corresponding to the dotting sequence signal are continuously detected more than a specific value that is shorter than the length of each dotting sequence signal (Col 11, L 53 - Col 12, L7);

a word sync detector (406 in Fig. 6), which is provided with symbols of said demodulated signals, for detecting the word sync signal of each sub-frame (Col 12, L 8-13);

a frame end counter (612 in Fig. 6) for determining termination of the received digital data frame by increasing or decreasing a counting number whenever each symbol is detected reaches a predetermined number, and for resetting to a initial number if the word sync signal is detected prior to reaching the predetermined number (Col 12, L13-29); and

a message processor means (30, 426, 428 in Fig.6) including a message accumulator that detects and stores at least one message word signal of the sub-frame from the demodulated signals, for recovering the at least one message word signal from message word signals stored in said message word accumulator until receiving of the digital data frame is terminated (Col 18, L65 – Col 19, L 3) .

B) Regarding claim 11, Hutchinson, IV et al. disclose a digital data receiver for recovering at least one message word signal included in a received digital data frame

which consists of a plurality of sub-frames, each sub-frame including a given dotting sequence signal, a given word sync signal and a message word signal in which each signal is represented by a plurality of symbols and modulated by frequency in a mobile communication system, wherein a dotting sequence signal of the first sub-frame is longer than dotting sequence signals of the rest of the sub-frames, and the word sync signal and message word signal of each sub-frame consist of the same signal length and pattern (Abstract), the digital data receiver comprising:

a digital FM demodulator (96 in Fig. 1) for receiving said frequency modulated signals, and for demodulating a dotting sequence signal, a word sync signal and a message word signal of each sub-frame which is in said digital data frame (as shown in Fig.1; Col 5, L33- Col 6, L17);

a long dotting sequence signal detector (406 in Fig. 6) for detecting a dotting sequence signal of a first sub-frame by determining whether symbols corresponding to the dotting sequence signal are continuously detected more than a determined value that is longer than the dotting sequence signal of the other sub-frames, but shorter than the length of the dotting sequence signal of the first sub-frame of the digital data frame (Col 11, L 53 - Col 12, L7); and

a message processing means (30, 426, 428 in Fig.6) having a message word accumulator that detects and stores the message word signal of at least one sub-frame from the demodulated signals, and for recovering the message word signal from the message word signals stored in said message word accumulator after the long dotting

sequence signal is detected by said long dotting sequence signal detector (Col 18, L65 – Col 19, L 3).

C) Regarding claim 13, Hutchinson, IV et al. disclose a method for recovering at least one message word signal included in a received digital data frame which consists of a plurality of sub-frames, each sub-frame including a given dotting sequence signal, a given word sync signal and a message word signal in which each signal is represented by a plurality of symbols and modulated by frequency in a mobile communication system, wherein a dotting sequence signal of the first sub-frame is longer than dotting sequence signals of the rest of the sub-frames, and the word sync signal and message word signal of each sub-frame consist of the same signal length and pattern (Abstract) , comprising the steps of:

(a) demodulating (96 in Fig. 1) said frequency modulated signals after receiving said frequency modulated signals of the digital data frame, and synchronizing the symbols of the signal;

(b) detecting the dotting sequence signal (406 in Fig. 6) from the synchronized symbols;

(c) counting (612 in Fig. 6) the number of synchronized symbol whenever each symbol is inputted after detecting the dotting sequence signal and determining the termination of receiving the digital data frame if the counted number reaches a predetermined value (Col 12, L13-29);

(d) in step (c), initializing the counting number of synchronized symbol if a word sync signal is detected prior to reaching the predetermined value (Col 12, L13-29);



(e) storing (428 in Fig. 6) the message word signal of the sub-game associated with the detection of the dotting sequence signal when the word sync signal is detected, and returning to the step (b); and

(f) recovering (30 in Fig. 6) the message word signal from the stored message word signals when determining the termination of receiving the signal data frame (Col 18, L65 – Col 19, L 3).

D) Regarding claim 14, Hutchinson, IV et al. disclose a method for recovering at least one message word signal included in a received digital data game which consists of a plurality of sub-frames, each sub-frame including a given dotting sequence signal, a given word sync signal and a message word signal in which each signal is represented by a plurality of symbols and modulated by frequency in a mobile communication system, wherein a dotting sequence signal of the first sub-frame is longer than dotting sequence signals of the rest of the sub-frames, and the word sync signal and message word signal of each sub-frame consist of the same length and pattern (Abstract), comprising the steps of:

(a) demodulating (96 in Fig. 1) the frequency modulated signals after receiving said frequency modulated signals of the digital data frame, and synchronizing the symbols of the signal;

(b) detecting and storing (406 in Fig. 6) the message word signal after the word sync signal of the digital data frame is detected;

(c) detecting (406 in Fig. 6) the start of receiving a new digital data frame by determining whether symbols corresponding to the dotting sequence signal are

continuously detected more than a determined value that is longer than the dotting sequence signal of the other sub-frames, but shorter than the length of the dotting sequence signal of the first sub-frame of the digital data frame (Col 11, L 53 - Col 12, L7); and

(d) recovering (30 in Fig. 6) the message word signal from the message word signals which are stored until the detection of the start of the new digital data frame (Col 18, L65 – Col 19, L 3).

E) Regarding claim 15, Hutchinson, IV et al. disclose a method for recovering at least one message word signal included in a received digital data frame which consists of a plurality of sub-frames, each sub-frame including a given dotting sequence signal, a given word sync signal and a message word signal in which each signal is represented by a plurality of symbols and modulated by frequency in a mobile communication system, wherein a dotting sequence signal of the first sub-frame is longer than dotting sequence signals of the rest of the sub-frames, and the word sync signal and message word signal of each sub-frame consist of the same signal length and pattern (Abstract), comprising the steps of:

(a) demodulating (96 in Fig. 1) the frequency modulated signals, and synchronizing the symbols of the signals;

(b) detecting (406 in Fig. 6) the dotting sequence signal from the synchronized symbols;

(c) detecting (406 in Fig. 6) the word sync signal after detecting the dotting sequence signal;

(d) detecting and storing (30, 426, 428 in Fig.6) the message word signal after detecting the word sync signal of the sub-frame;

(e) returning to (b) (as shown in Fig. 7) if the number of stored message word signal does not reach a number of total sub-games of the digital data frame and recovering the message word signal from the stored message word signals when the number of stored message word signals reaches the number of total sub-frames of the digital data frame.

F) Regarding claim 16, Hutchinson, IV et al. disclose a method for recovering at least one message word signal included in a received digital data frame which consists of a plurality of sub-games, each sub-frame including a given dotting sequence signal, a given word sync signal and a message word signal in which each signal is represented by a plurality of symbols and modulated by frequency in a mobile communication system, wherein a dotting sequence signal of the first sub-frame is longer than dotting sequence signals of the rest of the sub-frames, and the word sync signal and message word signal of each sub-frame consist of the same signal length and pattern (Abstract), comprising the steps of:

(a) storing (402 in Fig. 6) at least one message word signal of the digital data frame;

(b) detecting (406 in Fig. 6) the dotting sequence signal of the digital data frame, and then counting the number of symbols whenever each symbol is inputted;

(c) recovering (406 in Fig. 6) the message word signal from the stored message word signals when symbols corresponding to the dotting sequence signal are continuously detected more than a first specific value that is longer than the dotting

sequence signal of the other sub-frames, but shorter than the length of the dotting sequence signal of the first sub-frame of the digital data frame, and then returning to the step (b) (Col 11, L 53 - Col 12, L7);

(e) if the word sync signal is detected, storing the message word signal associated with the detection of the dotting sequence signal of the sub-frame, and increasing the counting number of a message word block by 1 (Col 12, L13-29); and

(f) returning to step (b) if the counting number of the message word block does not reach the second specific value, and after recovering the message word signal from the stored message word signals when the counting number of the message word block reaches the second specific value, and then returning to step (b) (as shown in Fig. 7).

G) Regarding claims 2 and 9, Hutchinson, IV et al. disclose the digital data frame receiver as recited, wherein the frame end counter determines terminations of the received digital data frame after the dotting signal detector detects at least one dotting sequence signal (as shown in Fig. 7; Col 13, L50-60).

H) Regarding claims 3 and 10, Hutchinson, IV et al. disclose the digital data frame receiver as recited, wherein the message processor means recovers the message word signal after the dotting signal detector detects at least one dotting sequence signal and the word sync detector detects the word sync signal (as shown in Fig. 6).

**Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is (571) 272-3049. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**


**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

October 13, 2004

Eva Yi Zheng  
Examiner  
Art Unit 2634

  
**SHUWANG LIU**  
**PRIMARY EXAMINER**